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DISEASE MODELING: DEVELOPING THE INFRASTRUCTURE FOR A COMPREHENSIVE, MULTI-NATIONAL, CLINICAL AND ECONOMIC BREAST CANCER TREATMENT MODEL

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OBJECTIVES: To develop the cost data infrastructure to support a comprehensive, multi-national breast cancer treatment decision-analysis model. The specifications required a user-friendly interactive interface for over 70 comparators composed of nearly 350 cost components used in 24 unique decision trees. The model required an ability to vary components readily and add new treatments and cost components to multiple trees. **METHODS:** Since standard decision-analysis software doesn't permit categorization of variables or application of the same variable to multiple decision trees: (1) trees were programmed in Visual Basic for the interactive interface, and (2) cost data were loaded into a Microsoft ACCESS database linked to the trees. Because of this structure, it was possible to categorize cost data as: 1) Drug Acquisition and Administration, 2) Adverse Events/Complications, 3) Concomitant Medications, 4) Hospitalizations, and 5) Monitoring Costs. For each country in the model, a separate database was developed with country-specific costs obtained from standardized databases, government sources, published literature, and a provider survey. **RESULTS:** This model was developed for six countries—US, U.K., Germany, Japan, France, and Italy—and included clinical and economic variables related to the diagnosis, treatment, and outcomes of breast cancer. The structure permits dynamic analyses via varying cost and probability scenarios that reflect country-specific treatment practices and international variations. Each country's cost database applies to four distinct decision trees representing different stages of breast cancer. The costs can be easily summarized by category and modified so that multiple cost components in multiple trees can be varied with one edit. New cost components can be added to each country's database and linked to the trees. **CONCLUSION:** When constructing large models (such as disease models) with several treatments having common cost components in multiple decision trees, using a categorized cost database linked to the treatment pathways will generate a user-friendly model with easily-varied cost inputs.

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INCIDENCE AND COST OF HOSPITALIZATION FOR 5-FU TOXICITY AMONG MEDICARE BENEFICIARIES WITH METASTATIC COLORECTAL CANCER

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BACKGROUND: While treatment with 5-fluorouracil (5-FU) plus leucovorin has been shown to prolong survival in patients with metastatic colorectal cancer, it also can cause significant toxicity, sometimes necessitating hospitalization. The incidence and costs of these admissions have not been fully documented. **OBJECTIVE:** To estimate the incidence and cost of hospitalizations for toxicities associated with 5-FU therapy in patients with metastatic colorectal cancer. **METHODS:** Using the 1994 Medicare 5% sample, we identified all patients with metastatic colorectal cancer who underwent colorectal surgery. We stratified these selected subjects into those who received 5-FU therapy within 90 days of their surgery ("5-FU group") and those who did not receive any chemotherapy ("no-chemotherapy group"); patients receiving chemotherapeutic agents other than 5-FU were dropped from the sample. Using techniques of survival analysis, we then compared the incidence and cost of all hospital admissions with listed ICD-9-CM diagnosis codes (principal or secondary) for conditions that may be related to 5-FU toxicity (e.g., volume depletion, stomatitis, nausea and vomiting). **RESULTS:** A total of 441 patients met all study entry criteria, including 192 who received 5-FU and 249 who did not receive chemotherapy following surgery. 5-FU patients were significantly younger than those in the no-chemotherapy group ($p < .001$). Mean ($\pm$SD) follow-up time was slightly longer in the 5-FU group (137 $\pm$ 96 days vs 117 $\pm$ 88 days for no chemotherapy). The incidence at 10.5 months of toxicity-related hospitalizations (principally volume depletion, agranulocytosis, gastroenteritis, and nausea and vomiting) was 31% among patients who received 5-FU and 8% among those who did not receive chemotherapy. The cost of inpatient care was $2,716 higher among 5-FU patients. **CONCLUSIONS:** Hospitalization for 5-FU toxicity is frequent and costly among Medicare patients with metastatic colorectal cancer.

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A QUALITY OF LIFE AUDIT OF PATIENTS WITH NON-SMALL CELL LUNG CANCER HAVING CHEMOTHERAPY AT ONE INSTITUTION

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